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ABSTRACT

This study addressed the high retention percentage of college bound English-as-a-Second-Language (ESL) students exiting and ESL program who were retained in college developmental reading classes because of poor entrance test reading scores on the Multi-Assessment Placement Services (MAPS) exam. A computer reading program, implemented to improve reading speed and comprehension, was used to determine the exit and entrance scores for ESL students (n=20) in the target group. A computerized, levelized, reading program--Reading Mastery with reading attack skills (skimming, scanning, comprehension, and cloze procedures) was used to boost student speed and comprehension levels in reading. The results showed a reading grade level improvement for the majority of students in the target group with an overall increase of 3.9 grade levels in vocabulary, 1.3 grade levels in comprehension, and a 3.4 grade level increase in reading rate. The results provide significant information about the effect of increasing reading speed on student comprehension levels through the use of the computer. It was concluded that the computer was a good tool to improve student reading rate, although for some students increased speed did not lead to increased levels of comprehension. Appendices include graphic analysis of progress and student data. (Author/JL)

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IMPROVING READING SPEED AND COMPREHENSION OF ESL STUDENTS WITH THE COMPUTER

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A Practicum Report

submitted to the Faculty of the Center for the Advancement of Education at Nova University in partial fulfillment of the requirements for the degree of Educational Specialist.

The abstract of this report may be placed in a National Database System for reference.

May/1991

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Abstract

Improving Reading Speed and Comprehension of ESL Students with the Computer.
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Descriptors: English (Second Language) / Reading Comprehension / Speed Reading / Reading Improvement/ Computer-Assisted Testing / Computer Managed Instruction / Reading Laboratories / Reading Tests/ Learning Laboratories/

The high retention percentage of college bound ESL students exiting an ESL program who were retained in college developmental reading classes because of poor entrance test reading scores on the MAPS (Multi Assessment Placement Services) exam was addressed. A computer reading program was implemented to improve reading speed and comprehension (Nelson-Denny, 1973) was used to determine entrance and exit scores for ESL students in the target group. A computerized, levelized, reading program-- Reading Mastery (American Language Academy, 1986) with reading attack skills--skimming, scanning, comprehension and cloze procedure was used to boost student speed and comprehension levels in reading. The results showed a reading grade level improvement for the the majority of students in the target group with an overall increase of 3.9 grade levels in vocabulary, 1.3 grade levels in comprehension, and a 3.4 grade level increase in reading rate. The results provide significant information about the effect of increasing reading speed on student comprehension levels through the use of the computer. It was concluded that the computer was a good tool to improve student reading rate although for some students increased speed did not lead to increased levels of comprehension. Appendices include graphic analysis of progress and student data.

Authorship Statement

I hereby testify that this paper and the work it reports are entirely my own. When it has been necessary to draw from the work of others, published or unpublished, I have acknowledged such work in accordance with accepted scholarly and editorial practice. I give this testimony freely, out of respect for the scholarship of other professionals in the field and in the hope that my own work, presented here, will earn similar respect.

Signed: Lee Culver

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CHAPTER I

Purpose

School and Community Setting

In this urban community college setting, English as a Second Language (ESL) instruction was provided to non-native speakers of English who aspired to begin college curriculum study in English with native speakers of English. This community college ESL program site was located at one of five campuses and three outreach centers, each with separate ESL programs, designed to serve a total foreign student enrollment of 5,080. The foreign student enrollment made this institution the United States college with the greatest foreign student enrollment in 1988. Foreign students at this college came from a variety of places including Latin America and the Caribbean-- 22,853 students, Europe-- 1,055 students, the Near East-- 632 students, the Far East-- 577 students, and Africa-- 208 students (figures according to Losak, 1988:18).

This researcher's ESL program site served approximately 800 ESL students in each of the three semesters taught each year. Fall and winter semesters

were sixteen weeks, and the spring/summer semester was twelve weeks. Each semester, the vast majority of ESL students were enrolled in an ESL curriculum which consisted of four courses--reading, writing, speech, and grammar and two laboratory courses-- speech laboratory and writing laboratory. This ESL program contained six levels with two beginning levels (College Preparatory I and College Preparatory II), two intermediate levels (Level I and Level II), and two advanced levels (Level III and Level IV). The two beginning levels each contained three classroom courses which consisted of a reading course, a writing course and a speaking and listening course and three laboratory courses which included a reading laboratory, a writing laboratory, and a speaking/listening laboratory. The intermediate and advanced courses each contained four classroom courses including reading, writing, speech, and grammar and two laboratory courses consisting of writing laboratory and speech laboratory. All of the aforementioned courses were designed to prepare ESL students to be mainstreamed into college level classes taught in English.

This researcher's role included instruction of ESL in all of the four skill areas --reading, writing, speech, and grammar-- at any of the six levels of instruction. Instructors in this ESL program selected

skill areas and levels they wished to teach prior to the beginning of each semester. The instructional assignment included five courses per semester and usually included at least one class to be taught in each of the skill areas. Instructors could teach within one level or among many different levels simultaneously; thus, the instructional load was varied. Additional duties of this instructor included supervising the ESL computer writing laboratory and materials, acting as consultant to the director of the ESL speaking and listening laboratory, and coordinating the College Preparatory Reading and Writing curriculum for other full and part-time instructors on a rotational basis. Students in the ESL program were predominantly from Latin America and the Caribbean with the largest groups from Cuba, Nicaragua, Haiti, and Russia. In nearly all classes, the student/teacher ratio was 30:1.

The aforementioned foreign students came to begin college study in the United States for a variety of reasons. Some students were refugees fleeing political, economic, or religious oppression in their native countries. Others were foreign students who desired technolgical, specialized, or graduate study programs not available or available on only a limited basis in their native countries. These ESL students were

required to show proof that they were high school graduates in their native languages prior to formal admission to the college, but they lacked the necessary English language skills to begin college study in English. Instead, they had to complete one or more semesters of ESL courses at the college or pre-college level to improve English language skills to a level acceptable for study and competition with native speakers of English in college classrooms.

The ESL students were provisionally examined, assessed, and placed with the English Placement Test (EPT) as well as with informal instructor evaluation according to abilities in reading, writing, speaking, and listening in the English language. The students could have varying ability levels which would prevent them from studying all skill areas of the same level of difficulty simultaneously. Thus, the task of placing and preparing each ESL student in the four ESL skill areas to achieve a level of English language proficiency necessary to compete with already fluent American college students was a difficult task to achieve.

Despite the different ethnic, social and educational backgrounds, and reasons for coming to study in the United States, these College bound ESL students shared the same ultimate objective of preparing their

English language skills so that they could study the degree program of their choice in English. In order to fulfill this goal, ESL students had to demonstrate that their English language skills were equivalent to those of other students beginning college level study in the United States. This crucial point of transfer from ESL courses to college courses taught in English and the required exam scores for ESL students to make this transition were the crux of the problem for ESL students desiring to pursue college level study in the English language.

Upon completion of the third or fourth level of this ESL program, graduating students were required to demonstrate that their English language skills were commensurate with levels required for other entering college freshmen before they could be mainstreamed into college classes for pursuit of a degree. The state had mandated that all degree-seeking freshmen were to take the Multi Assessment Programs and Services (MAPS) test which contained the Test of Standard Written English (TSWE) from the Scholastic Aptitude Test (SAT) and the reading comprehension and elementary algebra subtests of the College Board.

In past administrations of the MAPS tests to graduates of this ESL program, the great majority of

students who graduated from the ESL program demonstrated math and algebra skills sufficient to be exempt from College Preparatory (developmental) math courses. However, ESL students exiting this program had consistently tested into the College Preparatory components of the reading and writing courses. Through implementation of an ESL computer writing laboratory and revision of classroom curriculum in ESL, the number of former ESL students required to take the College Preparatory sections of writing had been declining. However, the number of former ESL students required to take the College Preparatory sequence of reading continued to be over half the graduating ESL population. This fact was evinced by scores received from the college testing department for the academic years 1986 and 1987.

On four separate testing occasions spanning the two year period, the number of ESL students exiting the program required to take Reading 0001 (REA 0001) or Reading 0002 (REA 0002) was over half of the ESL graduating class. Both REA 0001 and REA 0002 were developmental reading courses; the course REA 0001 represented a reading scale score of one to four and REA 0002 represented a reading scale score of five to eleven. Both represented a reading level below that required for

college study. For the fall, winter, and spring/summer semesters of 1986, the combined number of students who tested into either REA 0006 or REA 0007 was 80.7 percent. For the academic semester fall 1987, 73 percent of ESL students tested into either REA 0006 or REA 0007. For winter semester 1987, 67.8 percent of the ESL students tested into REA 0006 or REA 0007. For the spring/summer semesters of 1987, again 67.8 percent of the students tested into REA 0006 or REA 0007.

The great number of students required to take the developmental sequence of reading courses before they could register for college courses requiring heavy reading loads in English presented two problems. First, the data indicated that over half of the ESL students graduating from the ESL program were underprepared for reading at the college level according to MAPS standards. Second, there existed an attitudinal problem for the graduating ESL student who was disheartened to learn that after studying several semesters of ESL preparatory courses he/she was still underprepared and required to take additional preparatory courses before college courses in the major field could be taken. In addition, students who had completed the ESL reading program and who were required to take the College Preparatory reading courses reported that the skills taught in the

College Preparatory reading courses were a repetition of skills already taught in the ESL reading sequence. ESL students taking the MAPS test reported that the test was not extremely difficult, but that given a limited time frame to complete the test, students were unable to finish the MAPS reading section with a reading level and rate of speed acceptable for immediate enrollment in courses which required a college reading level.

There were three issues which concerned graduating ESL reading students. The students were required to take extra developmental reading courses after graduation from the ESL reading program. Time constraints on the MAPS test hindered students from demonstrating the reading attack skills they had already acquired. In addition, the developmental College Preparatory reading courses repeated skills taught at the ESL reading level. Thus, it was necessary to attack the problem of reading rate and comprehension for ESL students. This project attempted to increase reading rate and comprehension grade levels for ESL students who were performing at reading level ability below that required for college level reading in English. In this way, there would be no unnecessary duplication of skills already mastered at the ESL reading level. Thus, students could hasten their study of courses that required a heavy reading load in

English at a college level.

Over a period of sixteen weeks, 50 percent of a target group of Level III ESL reading students in the aforementioned program were to improve comprehension, speed, and critical thinking skills in reading by the equivalent of at least three grade levels on alternate forms of the Nelson-Denny Reading Test. The examination was administered as pre- and post-tests at the beginning and end of the implementation period. A target group included twenty high-intermediate ESL students who gained placement by successful completion of a low-intermediate reading course or by earning a score within a range of between seventy-one and eighty on the Michigan entrance placement test. The target population included a heterogeneous grouping of students from Latin America and the Caribbean, Europe, the Middle East, and the Far East. The largest group included students from Latin America and the Caribbean with one Argentine, two Brazilians, three Chileans, two Cubans, one student from the Dominican Republic, two Haitians, two Panamanians, one Peruvian, and two Puerto Ricans. The second largest group included two European pupils with one from Greece and the other from Turkey. There was only one student from Lebanon and one from Japan in the Middle and Far East respectively.

CHAPTER II

Research and Solution Strategy

A survey of the existing documents on improving reading skills for ESL students revealed that there were articles dedicated to isolated classroom techniques to improve the reading process in the ESL classroom. Other articles documented improvement of ESL reading skills for beginning students, high school students, or English for Specific Purposes (ESP) students whose reading tasks focused on reading English materials for use in specialized occupations. Virtually no researcher in the field of teaching ESL reading students presented a means for improving reading rate, comprehension, and critical reading skills in one documented study for post secondary adult ESL students. Most of the available literature on reading in ESL did suggest the potential of the computer to improve reading comprehension, reading rate, and critical thinking skills in reading. Closer observation of the articles on reading skills signaled the best solution for improvement of comprehension, rate, and critical thinking skills

in reading for adult ESL students at the post secondary level.

Much of the current research on improving reading skills in ESL focused on classroom techniques to improve reading comprehension and / or rate. Vann (1987:2) implemented a content based ESL reading program citing Krashen's (1985) theory "...that subject-matter classes may be superior to the language class for their ability to supply quantities of comprehensible language input." Vann (1987:7) stated:

> The seminar was evaluated positively by participants most of whom reported being tired of their regular [ESL] classes and anxious to move on to graduate courses in their disciplines.

Despite the seeming success of Vann's subject-matter reading classroom technique, no effort was made to increase the reading speed of ESL students in this group.

Brown (1982:5) documented use of a reading program which was competency-based. He related that students were pre- and post- tested with the Nelson Reading Test, and that they had to gain a minimum of two years reading level in each course. In this study, however, attention was paid to improving reading comprehension rather than reading speed.

The literature on improving ESL reading rate, comprehension, or critical reading skills did not

include studies designed to mainstream ESL students into classes requiring college level reading ability. Instead, the research presented primary level, secondary level, or ESP programs of different levels.

In two articles, Peck (1988) described methods of attack to improve reading skills in an ESP program which trained ESL students in emergency care training reading tasks. Special techniques used to boost reading skills included lecture and A.V. media, small group instruction, individualized instruction, and laboratory instruction. The method also employed an interdisciplinary approach to improve reading which integrated reading, writing, and content area skills to increase student interest.

In a supplement to the Emergency Care Reading Manual, Peck (1988:9) gave ways to use a newspaper with content based topics related to the field of study to improve student critical thinking skills in reading and reading comprehension. Peck stated: "Two fundamentals underlie any lesson geared toward comprehension improvement: sufficient background experience and an established purpose for reading." The techniques listed by Peck for improving reading comprehension merited consideration for use in an ESL reading program at a college level, but they did not include a plan

for improving reading rates of students.

Much of the available literature on reading in ESL utilizing the computer suggested the potential of the computer as a means to improve reading skills. However, there was no documentation of a study done using the computer to improve reading comprehension, reading rate, and critical thinking skills simultaneously in ESL classes. In fact, most of the articles discussed the potential possibilities for using the computer to improve reading skills or the pitfalls of computer programs that did not fully develop the skills desired for the ESL reading student. The articles rarely documented specific cases in which the computer programs were utilized to improve ESL reading skills.

Akst, as article editor (1984), presented Grinols (1984) discussion of several authors' views about the potential of computer-assisted instruction (CAI) for teaching reading skills at the college level. Fletcher & Atkinson (1972) and Mason (1980) as cited by Grinols (1984:46) "... indicate that students taught with CAI demonstrate significant advances in reading skills." Kulik, Bangert and Williams (1983) as cited by Grinols (1984:46) "...found that CAI reduced the amount of time needed for learning." Gerrell and Mason (1983) as cited

by Grinols (1984:46):

> ...compared the impact of reading material presented on the computer visual display with the same material in traditional printed passages. The authors concluded that the change in mode had a positive rather than a negative effect.

Wedman (1983) as cited by Grinols (1984:46) stated:

> ...at the college level available software appears to focus on specific word attack skills. As areas of development, multilevel comprehension and critical thinking ability have been largely ignored.

Wyatt (1984:46) stated: "Reading/vocabulary is one of the areas of the curriculum where computer assisted instruction holds the greatest promise." Wyatt noted that due to the idiosyncratic nature of the reading process, and the fact that there was an inconsistency of individual reading abilities among students in a reading class, the computer could tailor reading tasks to the abilities of each student. Wyatt went on to say that the computer could be adapted to provide the technical reading skills that have been identified as necessary in the ESL curriculum:

> The main focus of many modern reading courses in ESL is the development of a body of reading abilities, skills and techniques that have been increasingly well defined in recent years ... skimming and context guessing ... anaphoric reference, and paragraph main idea ... the notions of cause and effect ... classification, and definition ... reading improvement, readiness techniques, and vocabulary expansion. (Wyatt 1984:48)

Preisinger (1988) expressed the need for computer programs that improve reading comprehension to include schema theory methods in the computer-aided reading instruction. Adams and Collins (1979) as cited by Preisinger (1988:1) defined schema theory in this way:

> In recent years ESL reading comprehension has been dominated by schema theory, the fundamental tenet of which is that spoken or written text does not in itself carry meaning.

Carrel and Eisterhold, as cited by Preisinger, explained that it was the reader's previously acquired knowledge when combined with context clues in the text that provided meaning. Preisinger (1988:10) said: "According to schema theory, both text-based and knowlege-based schemata must be activated for succesful reading comprehension to occur." Accordingly, if the comments of Preisinger were followed, finding the proper CAI reading program for ESL students would require a program employing both bottom-up and top-down reading attack skills.

Gittinger (1986) mentioned the successful use of a computer program to teach ESL reading skills at the University of New Mexico, but he gave no exact details about what reading skills the program taught, nor was there mention of increasing reading rate or comprehension. Gittinger (1986:4-5) did, however, list four

advantages of using the computer which included "... differentiation of curriculum, differentiation of pace, increased ease of management of instruction, and increased information flow ..." , i.e. the instructor could get rapid feedback on total group performance through computer analysis of class progress.

Review of the available literature on classroom methods for improving reading rate and comprehension has suggested that using the computer to teach reading skills was the most promising alternative. ESL programs which have sought to improve reading skills for primary, secondary, beginning college ESL students, and ESP students in ESL have not combined improvement in reading rate, reading comprehension, and critical thinking skills in reading. Computer-assisted instruction may be the key to consolidate improvement of comprehension, rate, and critical thinking skills for ESL reading students at the community college level. Combining the aforementioned skills could enable adult college-bound ESL students to make the transition to reading at a rate and comprehension level required to understand texts written for native speakers of English at the college level.

Implementation Time Table

Week	
1	Identify the best CAI reading program.
	Discuss selected CAI program with lab technician.
	Establish computer terminal time frame availability with lab technician.
	Coordinate pre-test administration date with testing department.
	Coordinate syllabus modification with Reading III level coordinator.
	Administer pre-test to target group.
2	Orient students on computer use and CAI.
3	Begin Reading Mastery intermediate story one, comprehension and cloze exercises.
4	Check student progress #1 with CAI management disk. Students complete story two, comprehension and cloze exercises.
5	Make adjustments. Students do story three, comprehension and cloze exercises.
6	Check student progress #2 with management disk. Students do story four, comprehension and cloze exercises.
7	Make modifications. Students do story five, comprehension and cloze exercises.
8	Check student progress #3. Students do story six, comprehension and cloze exercises.
9	Make adjustments. Students do story seven, comprehension, and cloze exercises.
10	Check student progress #4. Students complete story eight, comprehension and cloze exercises.

11 Make adjustments. Students do story nine, comprehension and cloze exercises.

12 Check student progress #5. Students begin story ten, comprehension and cloze exercises.

13 Make adjustments. Students do story eleven, comprehension and cloze exercises.

14 Check student progress #6. Advanced students finish story twelve, comprehension and cloze exercises.

15 Make final adjustments. Slow-paced students try to finish intermediate stories and drills. Advanced students continue with the Reading Mastery advanced stories, comprehension and cloze exercises.

16 Administer post-test to experimental and control groups. Calculate results.

CHAPTER III

METHOD

Resources

During week one of implementation, the primary task was to identify a computer-assisted instruction reading program that combined exercises for improving reading speed, reading comprehension, and critical thinking skills. In addition, the optimal computer program would integrate both text-based and knowledge-based schema in reading instruction as suggested by Preisinger (1988). Fifty-three ESL reading software programs were listed in the Computer-Assisted Language Learning interest section of International TESOL under the heading of reading and vocabulary. Of these programs that taught reading comprehension and development, the focus tended toward beginning level reading skills or comprehension development. One program offered bilingual (English/Spanish) reading comprehension development at the intermediate level. Another developed word form recognition in reading. Some other programs employed cloze procedure or other forms of text reconstruction to improve reading skills. Extensive search of available ESL reading software signaled only four programs that

offered reading skill development at the intermediate or advanced levels of ESL.

Of the four advanced reading programs considered, the Reading Mastery Program (American Language Academy, copyright 1986) seemed the most promising for implementation. First, the Reading Mastery Program provided a bottom-up preview of new vocabulary by listing difficult vocabulary words with definitions and examples of vocabulary in context with pronunciation guides for vocabulary items prior to each reading story.

The program also provided a means to present the reading story text in a skimming mode to improve student reading rate. Before reading each lesson, students were to select a skimming speed from a menu consisting of four choices-- slow, medium, fast, or very fast. In addition, the program provided a set of comprehension questions following each reading passage to develop the critical thinking skills required to understand and analyze a reading passage. These critical reading skills included analysis in: problem/solutions, inference, character/feelings, cause/ effect, figurative language/ sensory images, main idea, comparison, sequence, reading for facts (details), fact vs. opinion, tone, setting, plot, and theme.

Also, the program provided a cloze procedure for reading passages to test student comprehension levels. Students could elect from three types of Cloze procedure-- 1) standard cloze, 2) select the interval cloze, or 3) a cloze deleting only the articles 'a', 'an', and 'the'. The type of cloze procedure could be pre-selected by the instructor or given as an option for the student to select.

The program offered a student-interactive component in the reading passage presentation by providing fictional stories in which students could be involved in the decision-making process of selected branching points in the story. Students were presented with 'what if you were the main character' scenarios in which they were to select the options that directed the remainder of the story action.

Although the stories were fictional passages with plots that could conceivably be common to any culture, there was no specific provision in the program for top-down schema which would necessitate prior cultural familiarity with the story content. One must consider that when presenting stories to students from a vast variety of cultural backgrounds, it would be impossible to provide cultural content schema relevant to all cultures in all stories.

Finally, the Reading Mastery Program provided an automatic score-recording option and teacher's management disk. These tools provided a means to monitor student progress throughout the implementation period. The computer system would enable the instructor to view, sort, transfer, add, change, and work with student scores on both the comprehension questions and the cloze procedure.

The cost of the program was $439.90 for one lab pack level. Each lab pack level included six master disks with two stories and accompanying comprehension and cloze exercises on each with four student work disk copies of each of the six master disks. Lab packs with different stories and levels of difficulty were available for beginning, intermediate, and advanced readers of ESL. The intermediate disks were selected for implementation since the target group would include a high intermediate group of ESL reading students. The payment for purchase of the program was provided from funds alotted for purchase of computer software for the ESL computer laboratory.

The computer lab technician reviewed the specifications of the Reading Mastery Program and approved its suitability for use on the Apple II computers currently in the ESL computer lab. The

technician also agreed to release computers for reading class use during portions of the level III reading class on Tuesdays or Thursdays from 12:30-1:30 to provide forty-five minute reading sessions. According to the Reading Mastery teacher's guide and handbook, forty to sixty minutes per session was the optimum time allotment for completion of one Reading Mastery lesson.

The Testing Department agreed to provide twenty-five copies of form C of the Nelson-Denny Reading Test as a pre-test with fifty self-grading answer sheets and a grading mechanism for converting raw scores to grade equivalent scores. The researcher would be responsible for administering and grading the pre-tests for the target group during the second week of implementation. The level three reading coordinator was willing to cooperate with syllabus modification to include the computer-assisted reading instruction. In addition, he agreed to act as observer and mentor in this experiment to boost reading speed, comprehension, and critical thinking skills through CAI.

Evaluation

In week two of implementation, students in the target group were administered form C of the Nelson-Denny Reading Test. The results appear in Table 1, p.37,

and in Appendix A, p. 52, there is a compilation of the countries of origin and the native language of each test taker. Lack of familiarity with the testing procedure caused pupil anxiety during testing, and the short time limitation of twenty minutes to answer fifty reading comprehension questions caused student frustration at inability to complete the entire section.

A second type of evaluation using the computerized disk management grading system would be used to monitor the students on a biweekly basis throughout the course of implementation. Every other week, all student records would be transfered from the student work disks to the teacher management disk. This procedure would allow the instructor to view: 1) individual student progress with respect to the specific story lesson read by each student, 2) the percentage correct of the connected comprehension questions, and 3) the percentage correct on the accompanying cloze exercises for each story completed. Pupils would be expected to begin with the first of twelve story-lessons and work sequentially to greater levels of difficulty as long as they earned a score of seventy-five percent or better for each lesson. By checking student scores on the teacher management disk on a biweekly basis, students could be asked to redo lessons completed with a score of less than

seventy-five percent before proceeding to lessons of greater difficulty.

Monitoring

During the second class session of week two, students observed a presentation on the operation of the Reading Mastery Program in a group session. The features of the vocabulary preview, the skimming procedure for increasing reading rate, the interactive branching feature, and the cloze procedure for judging reading comprehension levels were demonstrated. Select class members participated in operating the various phases of the program with the instructor facilitating as other students watched. In addition, students were briefed on start-up procedures as well as general disk care and handling procedures.

The third week of implementation marked the first session with complete hands-on use of the program by all students. Students seemed eager to participate, but an initial problem surfaced in a factory error in copying the disks. Although the two reading program sets containing six master copies of each of the disks for the intermediate level were functional, each of the four student lab pack sets containing copies of the master disks for student use were disfunctional. Thus,

initial start-up by students attempting to use the student disks generated "NO FILE FOUND" on the computer screen and the program was inaccessible to students. The commercial supplier of the program was contacted, and the problem of the disfunctional disks was explained. The supplier stated that similar problems had been identified by other consumers of the program who had received orders within the previous two month period (December, 1990 and January, 1991). The supplier agreed to replace all defective student lab disk packs and send them immediately. In the mean time, students worked with the functional master disks, but this necessitated distribution of all master disks regardless of the level of difficulty. This posed a problem of pacing the level of difficulty for the students using the program, and students expressed frustration at inability to perform well using the computer.

An initial check of student progress during week four of implementation revealed that, due to lack of student familiarity with the program and/or lack of pacing the level of difficulty of the reading passages and the exercises, only three of the nineteen students using the program were able to complete both the reading selection and the comprehension question sections. None of the students had been able to complete the cloze

procedure accompanying the reading passages. Lack of student familiarity with the computer and the program, as well as the problem of the disfunctional diskettes, had created the necessity of further teacher explanations and closer monitoring of students as they were involved in hands-on computer operation. Additionally, the newly received student disks would need to be put in use in order to better pace the level of difficulty in the presentation of each lesson for the students.

During week five of implementation, replacement disks arrived and were substituted for the disfunctional student disks. Adjustments were made to the configuration of the disks to pre-set and limit students to skimmimg, comprehension questions, and cloze exercises. Students were given further explanation of the program and advised to complete all the exercises related to each story before continuing to another story so that the computer would record student scores properly. A class discussion revealed that most pupils believed it was necessary that they finish both stories on each disk in each class session. Therefore, students spent all their time with vocabulary and skimming exercises instead of proceeding to the comprehension and cloze exercises. Because many of the students had not finished the exercises, the computer failed to record

scores for the exercises begun for the session. Students were instructed to finish the reading, the comprehension questions, and the cloze exercise before proceeding to a new story. Students were given a check list for all stories in the intermediate series on which to record their scores as stories were completed. A reward incentive was offered to any student able to successfully complete all the stories and exercises at the intermediate level with a grade of seventy-five percent or better. An additional point of consideration of the program was that if the students did not complete both the reading passage and the accompanying exercises within one session, the computer would demand that they reread the reading selection before continuing to to the comprehension and/or the cloze exercises. This situation was frustrating to students who felt pressured by time limits and unable to complete both the reading and exercise sections of each story in one class session.

A check of student progress during week six revealed that only a small percentage of students had been able to finish both the reading selection and the accompanying exercises. In addition, the computer management disk showed that students were still trying to complete more difficult reading selections despite

the fact that there were sufficient student diskettes for all students to be working sequentially at the level of difficulty beginning with the first lessons. Students would need to be briefed to assure that they began with initial lessons of minimal difficulty and continued advancing to lessons with a greater level of difficuty in a sequential order.

At the beginning of week seven, students in the target group were reminded that there were sufficient functional student disks of all stories for them to begin with lessons of minimal difficulty. They were advised to continue working on stories with increasing levels of difficulty only after mastery of lessons with minimal difficulty.

Prior to the beginning of week eight, students were given specific story assignments to assure that they advanced in the reading material according to their own level of reading ability within the Reading Mastery intermediate series of lessons. All students concentrated on the first two lessons in order of difficulty with much better student score results recorded on the grade management disk. Of the twenty students using the disks with primary and secondary levels of difficulty, over half of the them (thirteen students) were able to complete lessons obtaining

scores of seventy-five percent or better. Nevertheless, seven students appeared on the teacher's management disk as not having completed any story successfully. This management disk record appeared despite the fact that all students were carefully monitored by the instructor while working on the assigned stories. There were two possible explanations for this paradoxical event, i.e. the fact that students received no computerized grade report despite their completion of the assigned lesson with the instructor observing progress and completion. It was possible that some of these students had inadvertently disengaged the caps lock key while imputting answers into the computer. It was also possible that students had not answered all of the questions related to a specific exercise before continuing to the next section. Therefore, it would be necessary to warn all students that it was absolutely essential to make sure the caps lock key was depressed at all times while working with the computer reading program. In addition, students would need to be reminded that they would have to complete all items in each exercise section in order for the computer to record a score for them on a particular story.

At the beginning of week nine, all students were reminded to keep the caps lock key depressed during the

reading program operation in order not to disarm the computer recording of scores. In addition, all students were advised to finish every item in each section before continuing to the next one to guarantee that scores would properly be recorded for each section. Finally, students were monitored on their previously completed stories and grades and given new assignments based on their prior success or failure.

During week ten of implementation, students who had been previously unsuccessful in registering grades on the computer management grade disks were assigned peer facilitators to troubleshoot potential problems while the instructor was working with other students. The peer facilitators were students who had previously scored high on the stories completed. One characteristic of students who had previously been unable to view their exercise results on the computer or on the teacher management disk surfaced. Some students had entirely bypassed the vocabulary preview section before beginning the reading scanning exercise. When students completed at least some portion of the vocabulary preview before the scanning and the comprehension and cloze exercises, a greater number of students received score reports on their reading exercises. Despite careful instructor and peer

monitoring of student hands-on program use, four of the students were unable to receive their grades on the computer management disk. In at least two cases, the grade reports appeared on the student screen after the exercises were completed, but when later checked by the students themselves on the student grade option menu, the grades had not been recorded by the computer grade management system. In two cases monitored carefully by the instructor, the students had completed each step from vocabulary preview to reading and answering of all questions in the exercises, but the computer failed to register the grades reported on the screen on the computer management disk. Therefore, one must conclude that at least some of the disks were malfunctioning with respect to the computerized grade management system.

At the beginning of week eleven, all students were reminded to begin each story with the vocabulary preview before continuing with scanning the passage and exercise activities in order to facilitate proper recording of scores. Students were told to keep a written record of each screen report (initialed by the instructor or lab technician) to verify the screen grade report should it fail to be recorded by the computerized grade management system. Peer facilitator monitors were asked to continue to carefully watch those students who had great

difficulty in receiving the results of their work on the computer grade management disk.

A preliminary check of student scores during week twelve revealed that the vast majority (eighty-five percent) of the class members had completed most of the twelve intermediate reading stories and accompanying exercises with satisfactory progress or better. Three of the students had already finished all stories and exercises in the intermediate series and were given advanced computer stories and exercises to continue reading, scanning, and comprehension practice. Despite the students' attempts to follow all computer operating instructions carefully, some students were still unable to register their scores on computer exercises completed in class. This inability to record scores persisted despite careful instructor monitoring of the students and the procedures they were using with the reading program. There were evidently some computer disks that were functioning inadequately with inability to register student exercise progress on the computer management disks.

Prior to beginning week thirteen, students who had not yet finished the intermediate series of Reading Mastery were instructed to continue toward completion of all the twelve stories and accompanying exercises in the

intermediate level with satisfactory or better scores. A fourth student was added to the list of those who had already finished all the intermediate stories and exercises. All students were reminded to keep a written record of their scores for each story and related exercises in the case that the computer management disk were to have additional malfunctions.

By week fourteen, seven out of the twenty enrolled students had completed all twelve exercises in the intermediate series and were ready to begin work on the advanced comprehension stories and exercises. Of those students who had not yet finished the intermediate series, five were nearing completion of the series. One student had been forced to leave the country because of an emergency situation, and another had withdrawn from the class prior to completion because of a low grade average in the other portion of the course content. Considering all these facts, a total of six students out of the original twenty in the target group were working at a slower rate than the others in the class. The students advancing at the slower rate would have to work harder in order to finish the intermediate series before the end of the course.

During the final monitoring session of week fifteen of the implementation period, eleven of the twenty

students in the target group had managed to finish all twelve of the stories and accompanying exercises in the intermediate lab pack satisfactorily. As previously mentioned, one student had been required to leave the country for emergency reasons and had thus not completed all the computer exercises. A second student had withdrawn from the course prior to completion because of low test scores in the other segment of the reading course and had not finished the computer exercises. Seven class members had either not finished the reading selections and/or accompanying exercises satisfactorily or the grades had been inadvertently lost because of computer failure to record scores on the management disk with the students also failing to have the instructor or the lab technician check the scores for a manual record upon completion.

During the last week of implementation, nineteen of the students in the target group took form D of the Nelson-Denny Reading Test as a post test to measure overall improvement in vocabulary, comprehension, and reading rate. The pupil who had left the country early for emergency reasons had taken the test three weeks prior to the final week of implementation.

CHAPTER IV

Results

Review of student pre- and post-test scores on the Nelson-Denny Reading Test as well as student scores on the exercises which accompanied the Reading Mastery computerized reading program showed overall improvement and satisfactory progress for the implementation period.

The twenty students in the target group (see Table 1) earned a wide range of pre-test scores (see Table 2) on Form C of the Nelson-Denny Reading Test. The range of grade level scores included a spread of 12.5 grade levels for vocabulary, a 10.8 grade level spread for comprehension, and a 10 grade level spread for reading rate. The median grade level scores were quite close to the average student scores on the vocabulary, comprehension, and rate subsections of the Nelson-Denny Reading test. For the vocabulary section, the group median score of 8.9 was equal to the average group score of 8.9. For the comprehension subsection, the median score was 6.3 while the average score was 6.4. The median score for the reading rate subsection was 8.4 while the average score was slightly higher at the 8.9 grade level.

Table 1

A Comparison of Individual Student Pre- and Post-Test Scores On Forms C and D of the Nelson-Denny Reading Test

Student#	V PRT*	V POT*	C PRT*	C POT*	R PRT*	R POT*
1	10.5	14.2	6.6	5.0	10.3	15.0
2	10.1	13.1	6.3	6.3	12.3	13.2
3	7.3	11.6	5.0	6.0	5.0	6.2
4	9.6	13.3	5.0	7.0	15.0	7.8
5	0.4	11.3	7.5	9.9	12.3	12.7
6	8.9	11.6	7.5	6.3	7.0	13.2
7	8.1	11.9	6.0	6.6	13.0	15.0
8	8.3	13.5	6.6	9.2	11.3	15.0
9	12.9	14.3	10.8	7.0	11.3	15.0
10	7.3	9.0	6.0	9.2	6.0	15.0
11	7.5	13.6	5.0	7.5	6.5	15.0
12	8.9	11.9	4.0	9.2	6.5	15.1
13	8.6	14.3	6.0	6.3	5.0	7.3
14	10.9	12.7	7.0	9.9	9.1	8.6
15	9.6	13.8	8.1	9.2	5.0	11.4
16	8.3	14.0	0.0	8.7	5.0	7.8
17	12.9	13.8	10.0	8.1	14.6	15.1
18	7.7	11.0	6.3	8.1	8.4	10.3
19	10.9	14.3	6.3	7.0	7.7	15.1
20	9.2	12.2	8.3	7.0	7.0	12.2
Average Group Scores	8.9	12.8	6.4	7.7	8.9	12.3

*V PRT- Vocabulary Pre-Test
*V POT- Vocabulary Post-Test
*C PRT- Comprehension Pre-Test
*C POT- Comprehension Post-Test
*R PRT- Rate Pre-Test
*R POT- Rate Post-Test

Table 2

Range of Individual Student Pre- and Post-Test Scores on Forms C and D of the Nelson-Denny Reading Test

VPRTR*	VPOTR*	CPRTR*	CPOTR*	RPRTR*	RPOTR*	
0.4	9.0	0.0	5.0	5.0	6.2	
7.3	11.0	4.0	6.0	5.0	7.3	
7.3	11.3	5.0	6.3	5.0	7.8	
7.5	11.6	5.0	6.3	5.0	7.8	
7.7	11.6	5.0	6.3	6.3	8.6	
8.1	11.9	6.0	6.6	6.5	10.3	
8.3	11.9	6.0	7.0	6.5	11.4	
8.3	12.2	6.0	7.0	7.0	12.2	
8.6	12.7	6.3	7.0	7.0	12.7	
8.9	13.1	6.3	7.0	7.7	13.2	
8.9*M	13.3*M	6.3*M	7.5*M	8.4*M	15.0*M	
9.2	13.5	6.6	8.1	9.1	15.0	
9.6	13.6	6.6	8.1	10.3	15.0	
9.6	13.8	7.0	8.7	11.3	15.0	
10.1	13.8	7.5	9.2	11.3	15.0	
10.5	14.0	7.5	9.2	12.3	15.0	
10.9	14.2	8.1	9.2	12.3	15.0	
10.9	14.3	8.3	9.2	13.0	15.0	
12.9	14.3	10.0	9.9	14.6	15.0	
12.9	14.3	10.8	9.9	15.0	15.0	
12.5	5.3	10.8	4.9	10.0	8.8	= *RS

*VPRTR- Vocabulary Pre-Test Range
*VPOTR- Vocabulary Post-Test Range
*CPRTR- Comprehension Pre-Test Range
*CPOTR- Comprehension Post-Test Range
*RPRTR- Rate Pre-Test Range
*RPOTR- Rate Post-Test Range
*M - Median
*RS - Range Spread

Form D of the Nelson-Denny reading test was used as a post-test for the target group with post-test scores indicating a marked improvement on the vocabulary, rate and comprehension subsections for the group as a whole. The range of grade level scores on the post-test had a much smaller spread in each of the subsections. There was a spread of 5.3 grade levels for vocabulary, a 4.9 spread for comprehension, and an 8.8 grade level spread for rate. This smaller spread indicated that the students were more evenly grouped according to grade level in the reading skill areas by the end of implementation. The class average and median grade level scores were again quite closely matched as they were on the pre-test. For the vocabulary post-test, the median score of 13.3 compared with an average student grade level score of 12.8. On the comprehension subsection, the median score of 7.5 compared with an average grade level score of 7.7. For the rate subsection, the median grade score of 15.0 was higher than the average student grade score of 12.3. The average grade level increase for all students made the greatest advancement in vocabulary with a total increase of 3.9. The average increase in comprehension was 1.3 grade levels. The increase in reading rate was

great with a total average increase of 3.4 grade levels. Thus, vocabulary as well as rate had increased by more than three grade levels for the average student. Only overall average increase in comprehension had lagged behind with an increase of only 1.3 grade levels.

Post-test increases for the class as a whole as well as for the individual students met pre-implementation expectations favorably with an increase of three grade levels for over half the students in the target group (See Table 3 p. 41). Individual increases for each student were similar to the increases for the group as a whole. The frequency of students who improved by three or more grade levels was the greatest. Sixteen students improved by three or more grade levels in vocabulary. Only five students or one-fourth of the student population improved by three or more levels in comprehension. The combined total improvement for both vocabulary and comprehension totaled fourteen students who improved three or more grade levels. Eleven students improved three or more grade levels in reading rate. The second largest frequency distribution included students who had improved by one or two grade levels. Four students improved by one or two grade levels in vocabulary.

Table 3

Distribution of Student Grade Level Increase or Decrease On the Nelson-Denny Reading Test

Levels Advanced	Vocabulary	Comprehension	Rate
3 or more	16 pupils	5 pupils	11 pupils
1 to 2	4 pupils	7 pupils	6 pupils
0	0 pupils	3 pupils	1 pupil
Decreased Ability Levels	0 pupils	5 pupils	2 pupils

Seven students improved by one or two grade levels in comprehension, and six students improved by one or two levels in reading rate. The next most frequent distribution was that of students who had remained at the same grade level. Although no student remained at an equal level of vocabulary, three students remained at the same level of reading comprehension, and one student stayed at the same grade level with respect to reading rate. In addition, no student showed a grade level decrease for vocabulary, although five students demonstrated a decrease in comprehension levels and two students decreased in reading rate levels.

Considering the target group as a whole, one can say that the final results met and surpassed the projected results with respect to increase by three or more grade levels in vocabulary and reading rate. Although only one-fourth of the target group was able to increase comprehension by three or more grade levels, over half the target group (twelve students) did increase their reading comprehension by one or more grade levels. When one compares the comprehension results of students with a decrease in comprehension with the rate results for those same students, one finds

that those students who failed to increase reading comprehension or who decreased in comprehension succeeded in improving their reading rate greatly. One may conclude that exercises designed to increase reading rate at an extremely fast pace may in fact increase rate so fast that some students read too fast to totally comprehend or to improve their comprehension. At times when students read faster than they can concentrate and understand, then reading rate might increase but reading comprehension could decrease.

Student records on the Reading Mastery computerized stories and exercises also provided favorable results. Of the twelve stories and exercises in the intermediate level, eleven of the twenty students (over one-half) were able to complete all twelve stories and exercises with a passing average. Ten of the students who finished the intermediate level went on to complete more stories and exercises in the Reading Mastery series at the advanced level. Seven of the twenty students who remained in the class until the end of the implementation were unable to complete all of the stories and exercises in the intermediate Reading Mastery series. Two students were unable to remain in the class until the end of the implementation period.

The class average (Table 4 p.45) for the story-related comprehension exercises and cloze procedures was also favorable. The average class score on completed intermediate assignments for the comprehension exercises was 87 per cent. The average class score for completed intermediate cloze procedure exercises was 92 percent. For those students who were able to complete exercises at the advanced level, the average class score for comprehension exercises was 83 per cent, and the average class score for cloze procedure exercises was 90 per cent. Overall, the students showed lower scores for comprehension related exercises on the pre- and post-test versions of the Nelson-Denny Reading Test and on the computerized comprehension questions than on other reading skill activities such as vocabulary acquisition, reading rate, and cloze procedure. This observation leads to the conclusion that reading comprehension activities, due to their abstract nature, require the synthesis of a wide variety of reading skills, and also require a greater degree of practice to achieve real advancement. More concrete skills such as vocabulary acquisition and reading rate show improvement taking place at a faster rate because of their more concrete nature which eases acquisition.

Table 4

A Comparison of Average Individual Student Scores on Reading Mastery Comprehension and Cloze Exercises

Student#	ICOA*	ICLA*	ACOA*	ACLA*
1	88	93	N/A	N/A
2	100	97	99	98
3	71	98	70	91
4	98	92	N/A	N/A
5	76	87	N/A	N/A
6	86	97	85	90
7	95	99	100	100
8	87	88	80	30
9	81	95	80	96
10	88	100	N/A	N/A
11	82	86	40	100
12	90	93	N/A	N/A
13	98	100	95	95
14	77	92	N/A	N/A
15	75	85	N/A	N/A
16	50	75	N/A	N/A
17	98	99	90	100
18	99	94	90	95
19	98	100	N/A	N/A
20	93	94	N/A	N/A
Group Average	87	92	83	90

*ICOA- Intermediate Story Comprehension Average
*ICLA- Intermediate Story Cloze Exercise Average
*ACOA- Advanced Story Comprehension Average
*ACLA- Advanced Story Cloze Exercise Average
*N/A- Not Applicable/ Not Started

Even though critical thinking skills were incorporated into Reading Mastery exercises, the extra practice with activities to develop critical thinking ability was not instrumental in improving reading comprehension levels for the target group.

CHAPTER V

Recommendations

The overall success of the implementation period and the attempt to raise student reading levels in rate and comprehension was greeted favorably by both the Reading III level coordinator and by the department chairperson. The Reading level III coordinator noted:

> It is my opinion that this project potentially can have great benefit to our ESL program by increasing students' speed, vocabulary, and comprehension of reading materials. I would recommend it as an addition to our computer materials.

The department chairperson also expressed the desire for incorporating the Reading Mastery Program as a supplement to the reading curriculum to be used in a laboratory setting. At the present time, there is no specific reading laboratory component for this researcher's department. The need for added reading skill practice is evident from the dramatic increases in vocabulary acquisition and reading rate signaled by the addition of the Reading Mastery component for pupils in the target group. However, time and space availability in the computer lab, as well as scheduling conflicts,

must be resolved before implementation of such a reading laboratory could take place.

Two other considerations need to be addressed with regard to the specific implementation of the Reading Mastery Program. First, the great difficulty in using the teacher's computer management disk and grading system must be resolved by the manufacturer. This would provide a more reliable source of computer record keeping to eliminate the need for manual record backup by the teacher and the students. The suppliers of the Reading Mastery Program are aware of this need and have promised to rectify this problem with the computer grade management system. Second, although there was student advancement in vocabulary, comprehension, and rate with implementation of the Reading Mastery Program, improvement of reading comprehension lagged behind the student advancement noted in vocabulary and rate. Further pre- and post-testing combined with added use of the Reading Mastery program could indicate that more practice with additional comprehension exercises (either with the computer or with other sources) may be necessary for students to make greater advancements with respect to reading comprehension. Examination of all the aforementioned factors will signal the ultimate success of computer assisted reading instruction in this

curriculum. In addition, this program merits consideration for implementation in a reading program for native speakers who have vocabulary deficiencies or who may need to improve their reading rate. All evidence considered, the Reading Mastery Program warrants further implementation to determine its full potential for improving reading skills.

Reference List

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Appendices

Appendix A
Student Origin and Language

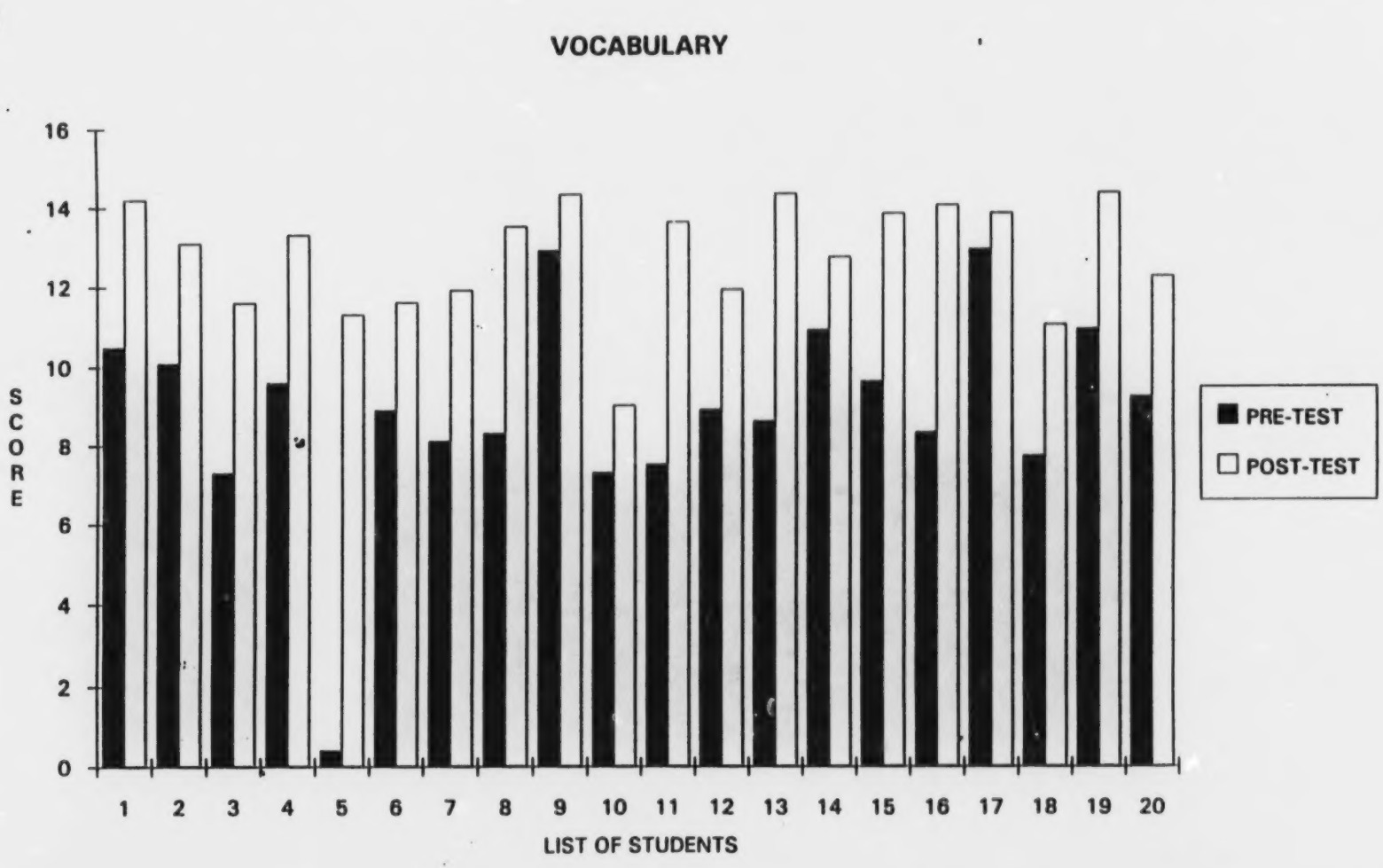
Appendix A

A Listing of the Countries of Origin of Students in the Target Population

Student Number	Country of Origin	Native Language
1	Brazil	Portuguese
2	Nicaragua	Spanish
3	Panama	Spanish
4	Dominican Republic	Spanish
5	Turkey	Turkish
6	Puerto Rico	Spanish
7	Chile	Spanish
8	Japan	Japanese
9	Argentina	Spanish
10	Lebanon	Arabic
11	Puerto Rico	Spanish
12	Haiti	Creole/French
13	Brazil	Portuguese
14	Cuba	Spanish
15	Panama	Spanish
16	Peru	Spanish
17	Haiti	Creole/French
18	Greece	Greek
19	Chile	Spanish
20	Chile	Spanish

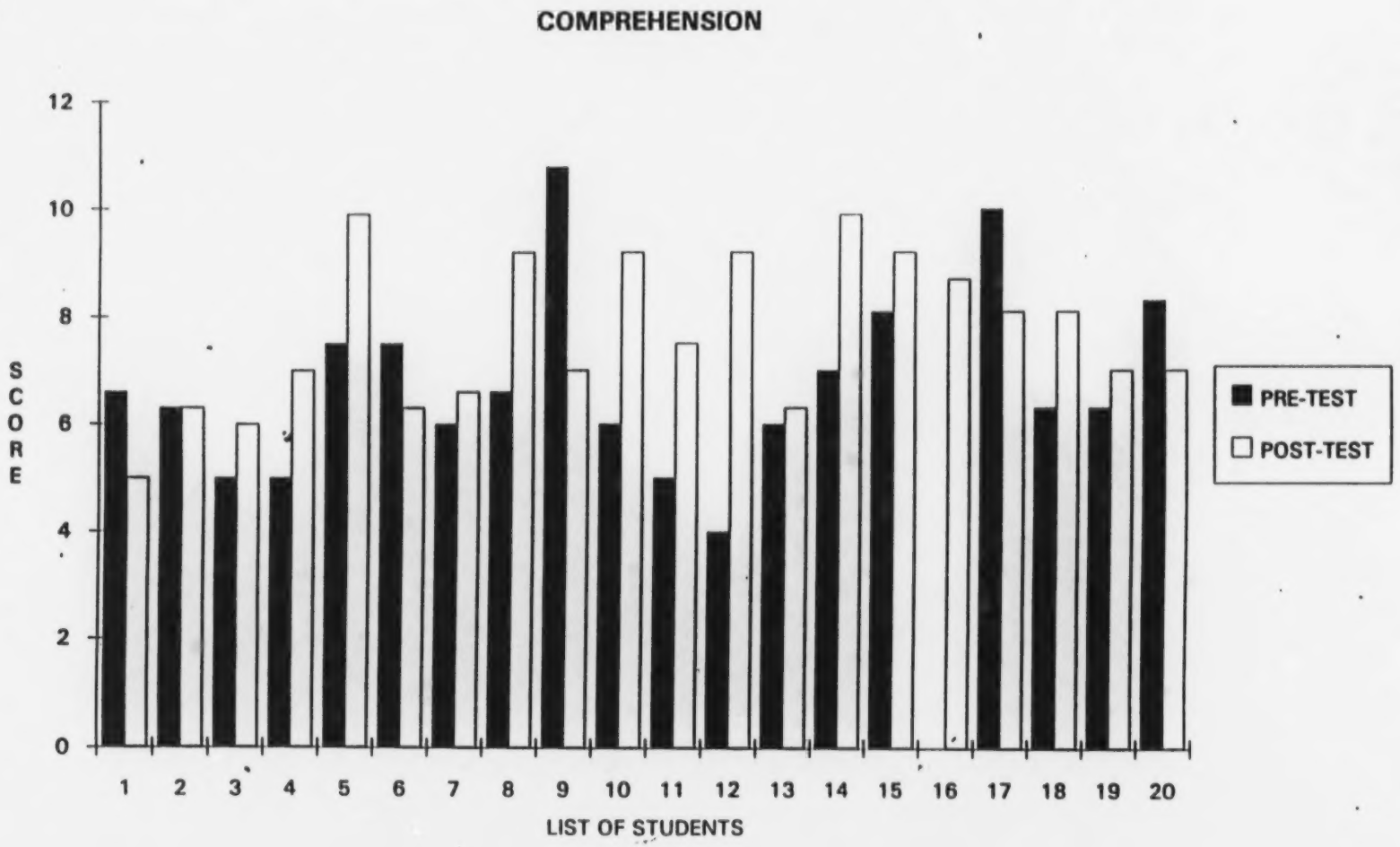
Appendix B
Vocabulary Scores Graph

56


VOCABULARY
SCORE
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST

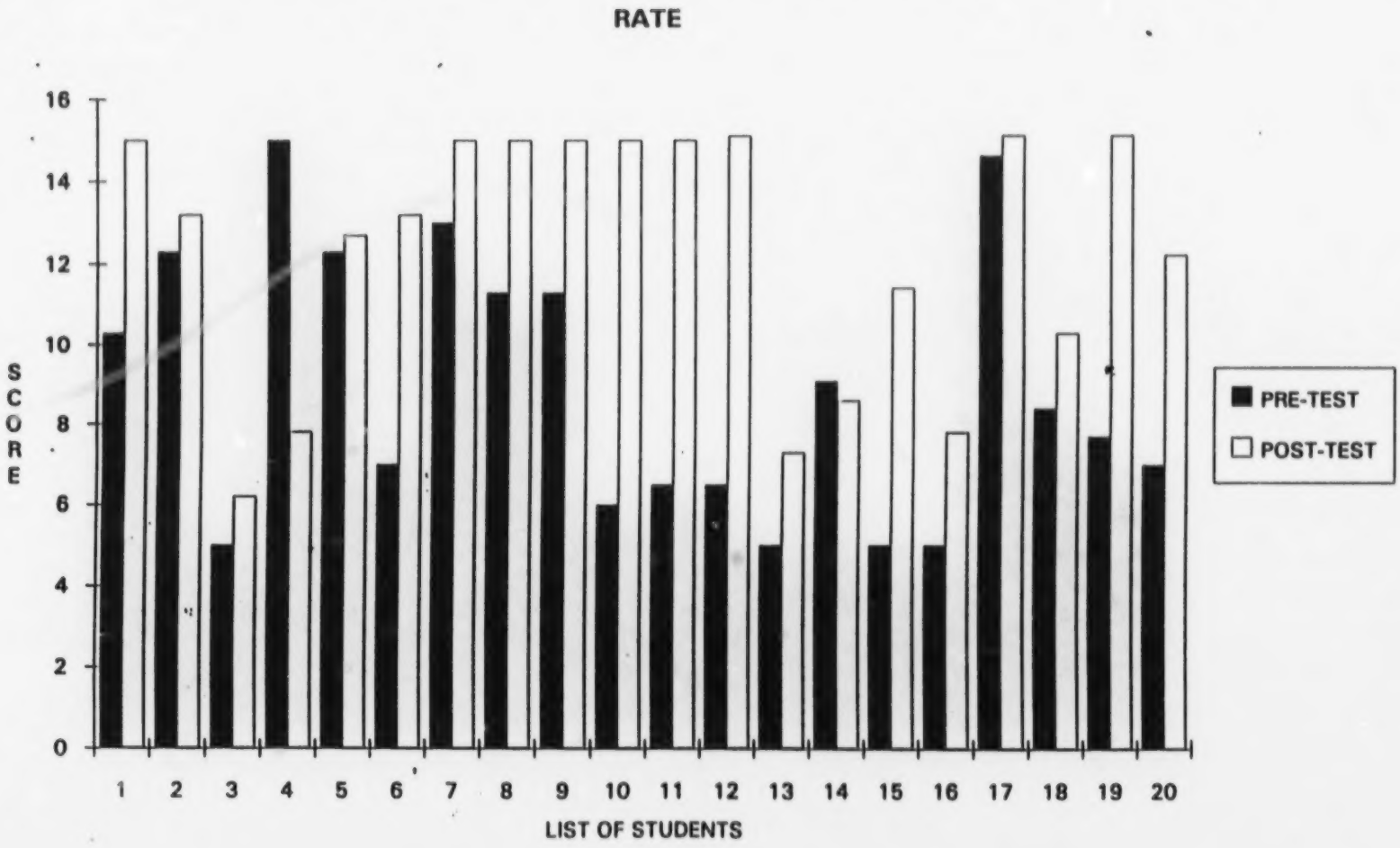
Appendix C
Comprehension Scores Graph

58


COMPREHENSION
SCORE
0
2
4
6
8
10
12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST

Appendix D
Rate Scores Graph

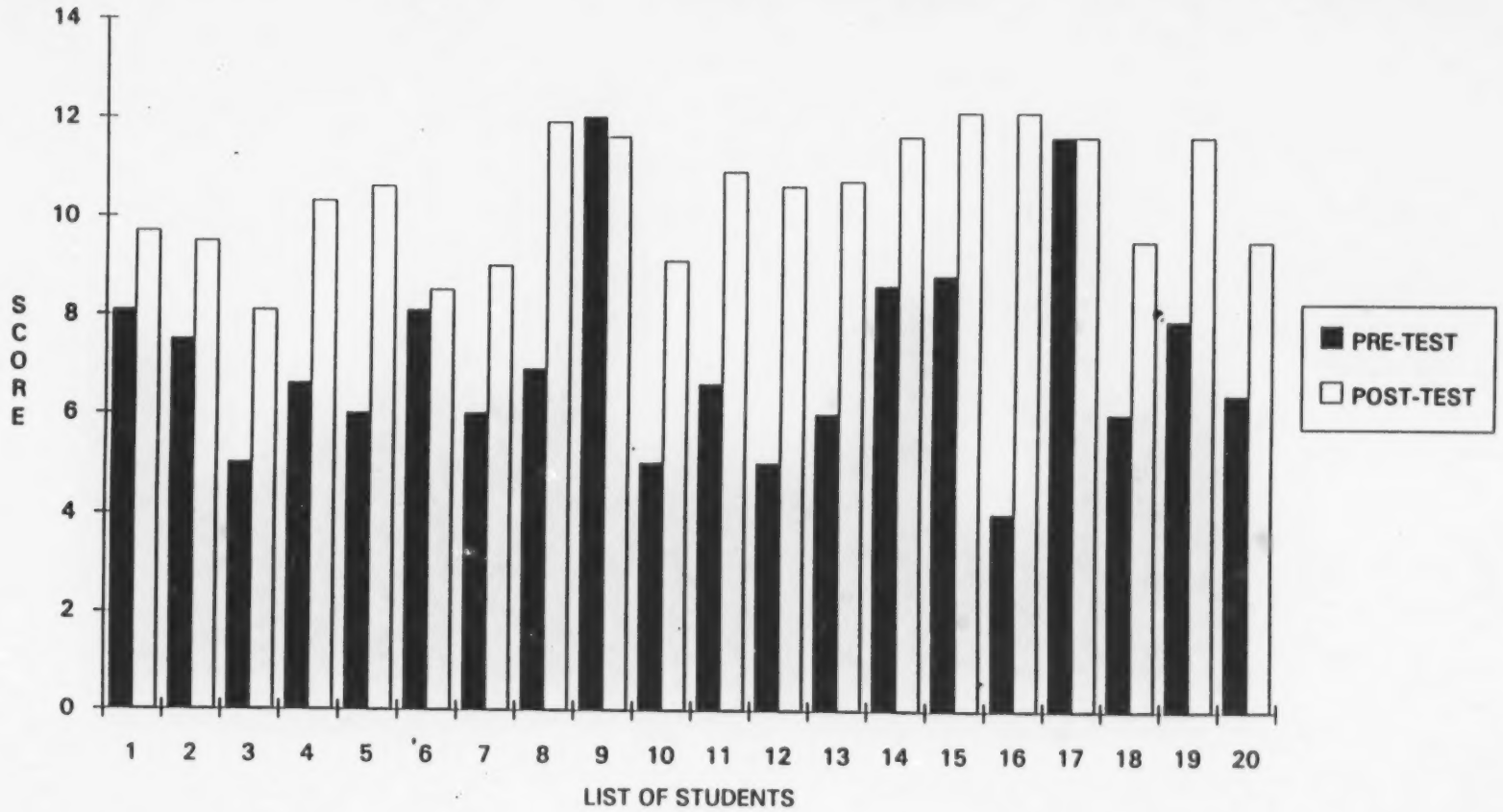
60


RATE
SCORE
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST

Appendix E
Combined Scores Graph

62

TOTALS FOR VOCABULARY & COMPREHENSION



Dissemination Packet

Esteemed Nova Colleagues:

It is my pleasure to inform you of recent findings concerning student improvement of comprehension, rate, vocabulary, and critical thinking skills in reading through the use of a computer. The implementation involved students in a high inermediate ESL reading class; however, the computer program implemented to boost reading skills could also help native speakers of English to improve reading skills at the secondary level.

The data included in the annotated bibliography as well as the appendices suggests the merit and success of using the computer to improve student reading skills. This information is submitted for your perusal with the hope that it may provoke further thought, discussion, and research to improve student reading skills in future studies.

Sincerely,

Lee Culver

Lee Culver

Abstract

Improving Reading Speed and Comprehension of ESL Students with the Computer.
Culver, Lee C., 1991: Practicum Report, Nova University, The Center for the Advancement of Education.
Descriptors: English (Second Language) / Reading Comprehension / Speed Reading / Reading Improvement/ Computer-Assisted Testing / Computer Managed Instruction / Reading Laboratories / Reading Tests/ Learning Laboratories/

The high retention percentage of college bound ESL students exiting an ESL program who were retained in college developmental reading classes because of poor entrance test reading scores on the MAPS (Multi Assessment Placement Services) exam was addressed. A computer reading program was implemented to improve reading speed and comprehension (Nelson-Denny, 1973) was used to determine entrance and exit scores for ESL students in the target group. A computerized, levelized, reading program-- Reading Mastery (American Language Academy, 1986) with reading attack skills--skimming, scanning, comprehension and cloze procedure was used to boost student speed and comprehension levels in reading. The results showed a reading grade level improvement for the the majority of students in the target group with an overall increase of 3.9 grade levels in vocabulary, 1.3 grade levels in comprehension, and a 3.4 grade level increase in reading rate. The results provide significant information about the effect of increasing reading speed on student comprehension levels through the use of the computer. It was concluded that the computer was a good tool to improve student reading rate although for some students increased speed did not lead to increased levels of comprehension. Appendices include graphic analysis of progress and student data.

Annotated Bibliography

Competency Based Reading Programs

Brown, Dennis et al. "ESL: Integration of English, Reading and Speech," Western College Reading Association Conference, April 1-4 1982.

This conference presentation article documents the implementation of a competency-based reading program. Students take pre- and post-tests of the Nelson Reading test. Students must progress a minimum of two years reading level equivalent in each course as well as read at the exit test level to progress to the next course level.

Computer-Based Reading Programs

Gittinger, Jack D. Jr. "Mobile Computer-Assisted Instruction in Rural New Mexico." Annual Southwest Conference for Rural Education, February 14-15, 1986.

This conference presentation article presents a program that uses the computer to teach reading and ESL. The author lists various advantages of using the computer to facilatate instruction in the curriculum of a reading program.

Preisinger, Robin et al. "Reading, Schema Theory: What's the Connection?" Annual Meeting of the Teachers to Speakers of other Languages, March 8-13, 1988.

This article, based on a conference presentation, explains the need for schema theory methods to be part of computer-aided reading instruction. The value of including both text-based and knowledge-based reading instruction in every reading program is explored.

Wyatt, David H. "Computers and ESL: Language in Education: Theory and Practice" ERIC Clearinghouse on Languages and Linguistics 1984.

This article shows the value of the computer to teach reading, vocabulary, and technical reading skills. The particular adaptability of the computer to individual student reading levels and student needs that may vary greatly in the classroom are explored.

Computer-Assisted Reading Instruction

Akst, Geoffrey, Ed., et al. Microcomputers and Basic Skills in College: Applications in Reading, Writing, English as a Second Language and Mathematics. City University of New York, New York, 1984.

This article provides a survey of what various experts have said about the value of computer-assisted reading instruction. After providing this overview, the article concludes that despite positive commentary about using CAI, there is a great need for greater development of CAI reading programs to teach critical thinking skills.

Reading Skill Improvement in College ESP Programs

Peck, Sandra. "Emergency Care Reader: English for Special Purposes Training Model for Early Entry into Allied Health Occupational Programs." El Paso Community College, Texas, 1988.

This article describes an English for Special Purposes program which trains ESL students to improve reading skills for specific use in emergency care attendant reading tasks. Special methods employed to boost reading skills include A) lecture and A.V. Media, B) Small Group Instruction C) Individualized Instruction, D) Laboratory Instruction.

Peck, Sandra. "Emergency Care Reader: A Supplement to the Emergency Care Attendant Reading Manual" El Paso Community College, Texas, 1988.

This article as a supplement to the Emergency Care Attendant Reading Manual lists ways to use newspaper content topics related to a field of study to improve critical thinking skills in reading. The article also suggests ways to use the newspaper to improve reading comprehension.

Content Area Reading Instruction in an ESP Program

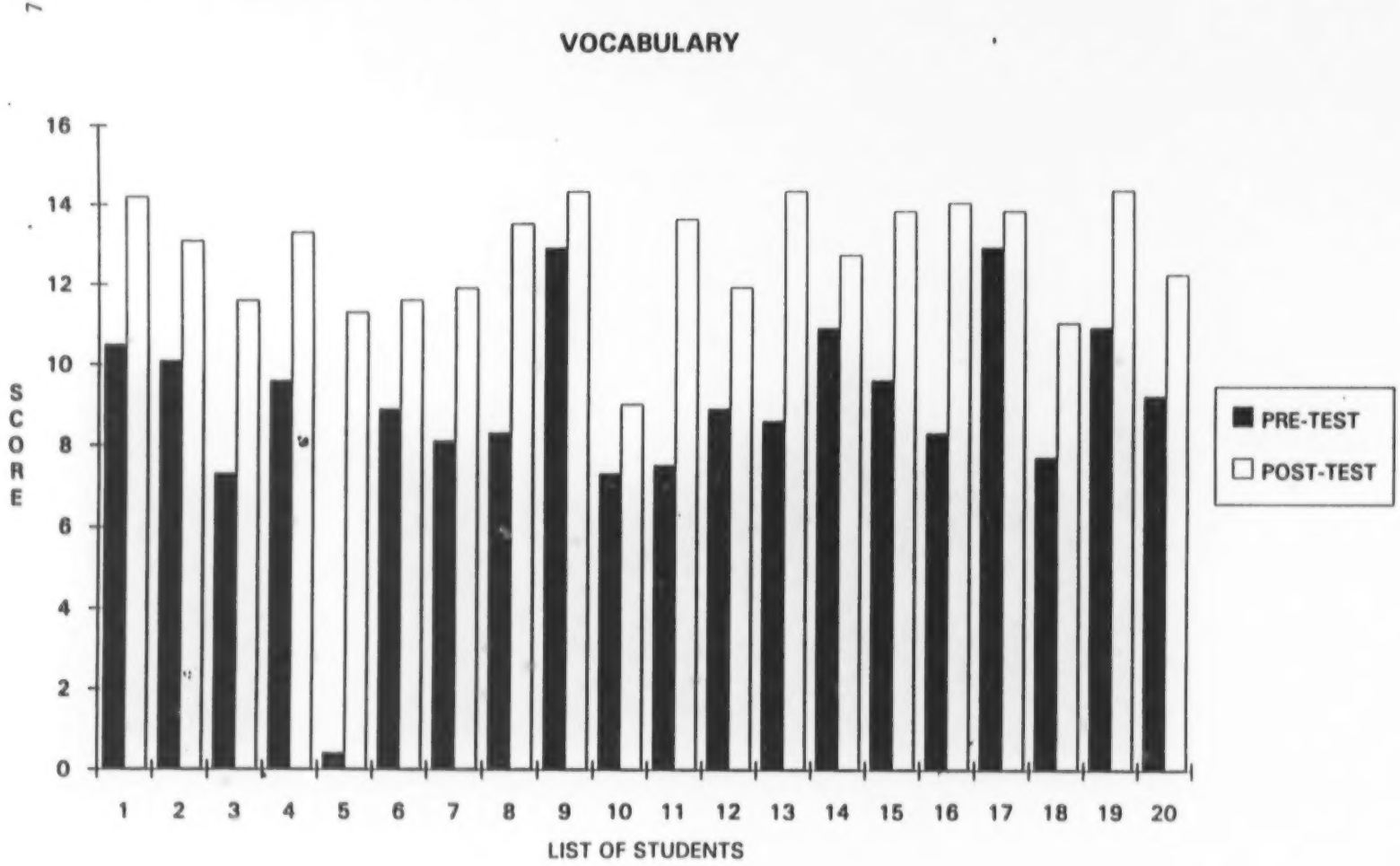
Vann, Roberta J. "Problems in the Transfer of Agricultural Technology: An ESP Program." ERIC Clearinghouse on Language and Linguistics, 1987.

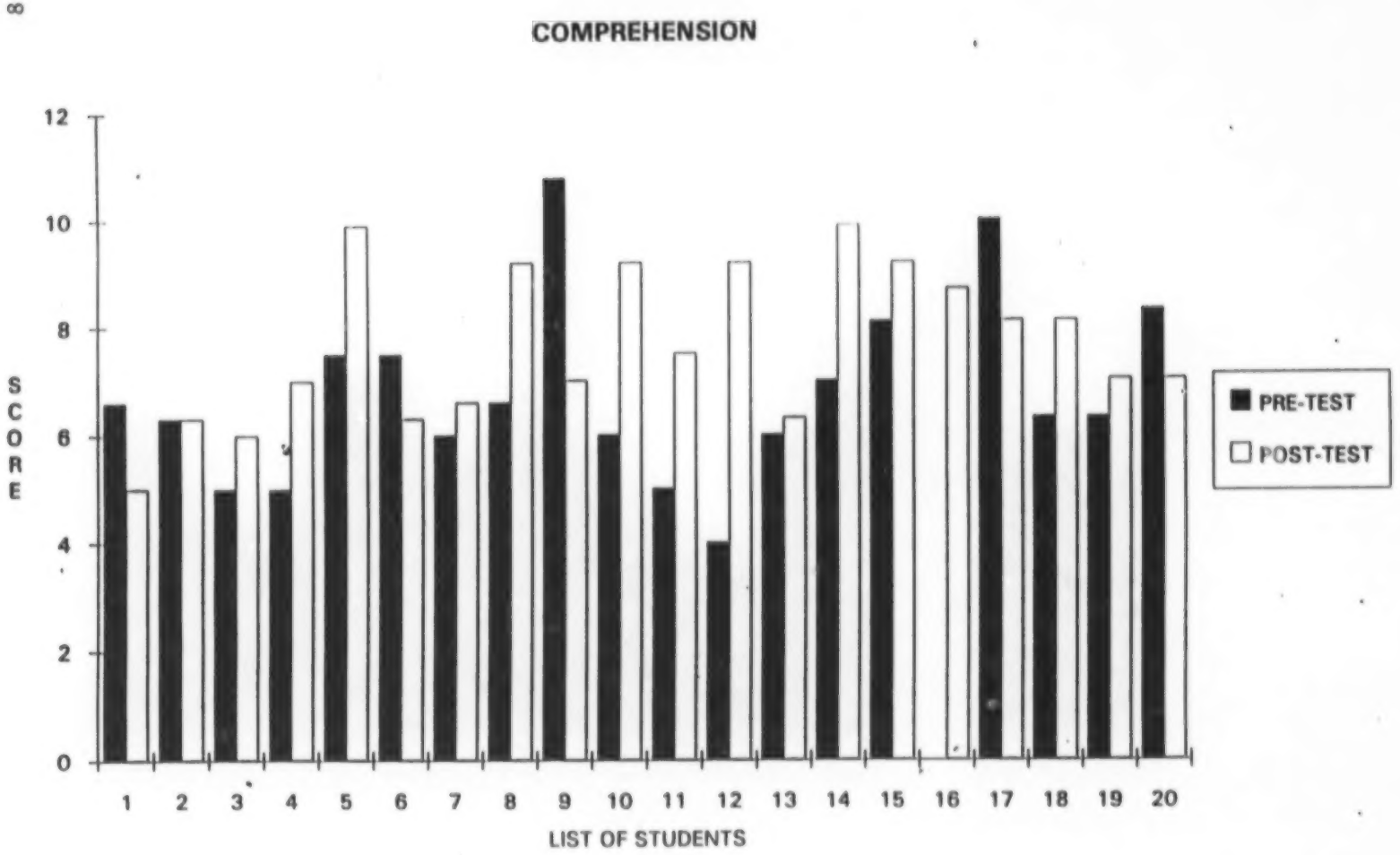
This article cites Krashen's (1985) theory concerning content area classes as a superior provider of comprehensible language input. ESL students expressed a positive attitude about content area instruction as implemented in this study to improve reading skills in vocational disciplines.

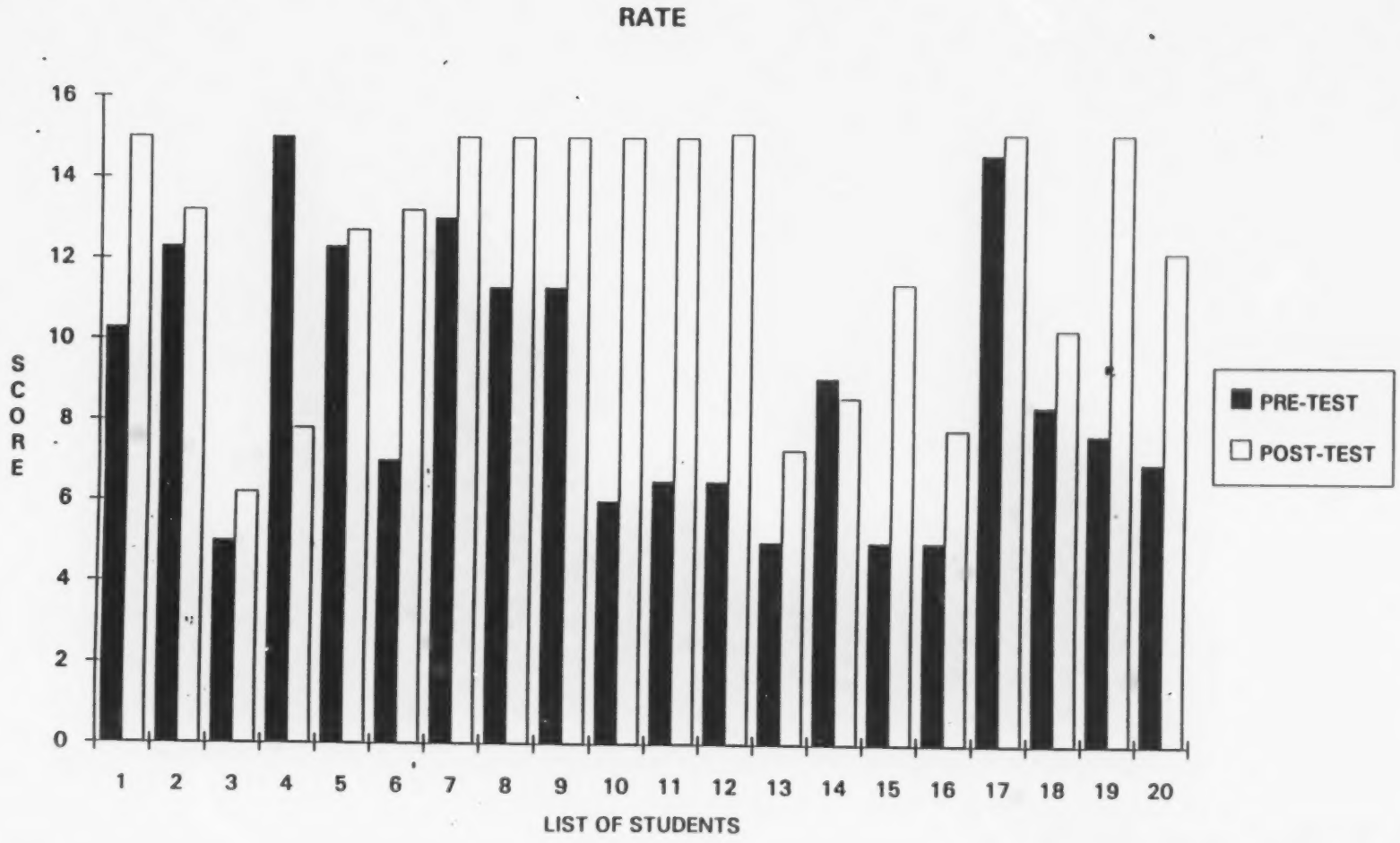
Appendix A

A Listing of the Countries of Origin of Students in the Target Population

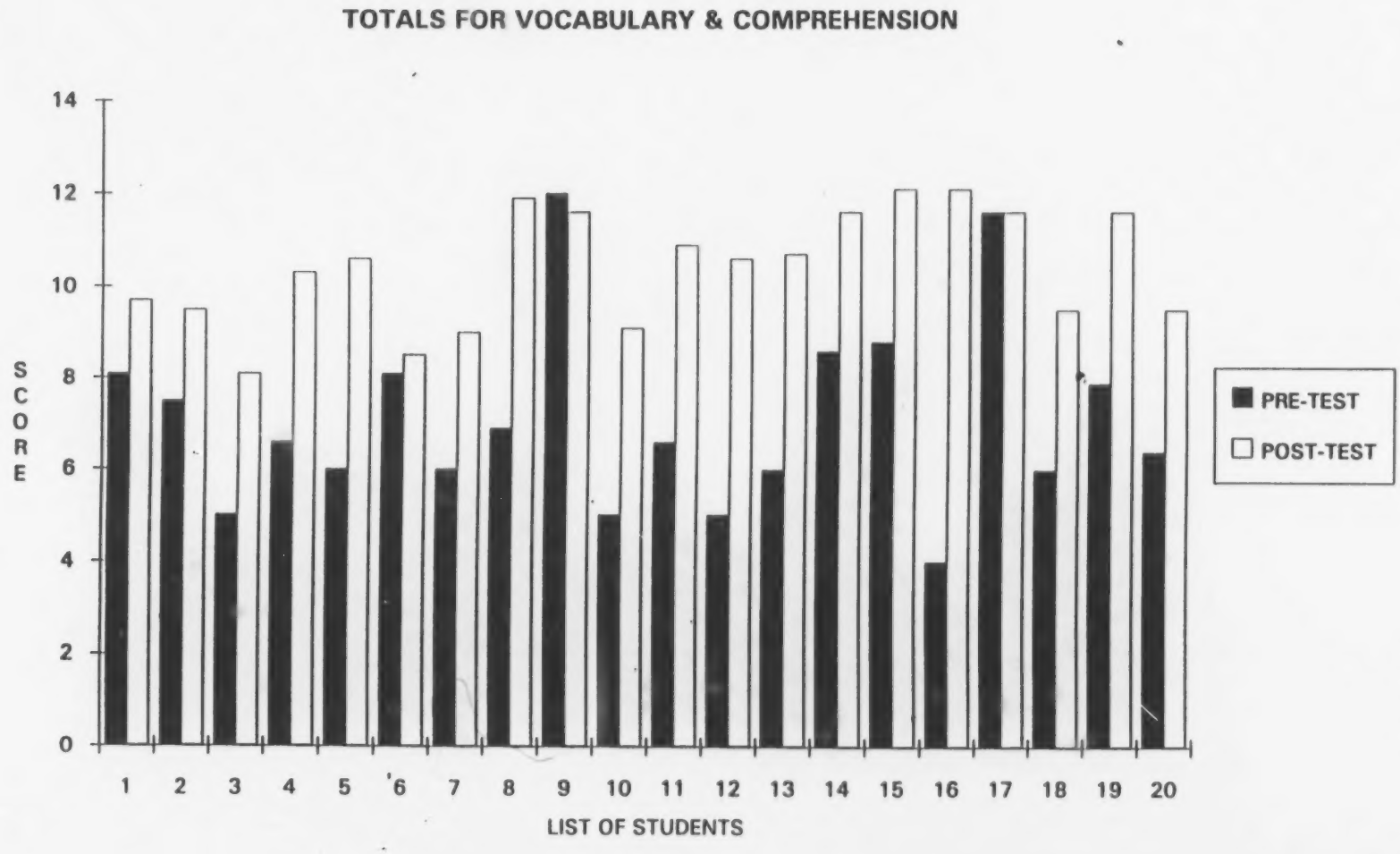
Student Number	Country of Origin	Native Language
1	Brazil	Portuguese
2	Nicaragua	Spanish
3	Panama	Spanish
4	Dominican Republic	Spanish
5	Turkey	Turkish
6	Puerto Rico	Spanish
7	Chile	Spanish
8	Japan	Japanese
9	Argentina	Spanish
10	Lebanon	Arabic
11	Puerto Rico	Spanish
12	Haiti	Creole/French
13	Brazil	Portuguese
14	Cuba	Spanish
15	Panama	Spanish
16	Peru	Spanish
17	Haiti	Creole/French
18	Greece	Greek
19	Chile	Spanish
20	Chile	Spanish


VOCABULARY
SCORE
16
14
12
10
8
6
4
2
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST


COMPREHENSION
SCORE
0
2
4
6
8
10
12
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST


RATE
SCORE
0
2
4
6
8
10
12
14
16
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST

10


TOTALS FOR VOCABULARY & COMPREHENSION
SCORE
0
2
4
6
8
10
12
14
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
LIST OF STUDENTS
PRE-TEST
POST-TEST

Attachments

Appendix Q

Software Evaluation

1. Title, Publisher, Copyright Date: Reading Mastery, American Language Acad (1986)

2. Type

Tutorial _____ Drill and Practice Reading drill & practice

Game _____ Simulation _____

Combination _____ Test/Diagnosis _____

Administrative _____ Other _____

3. User

Preschool _____ Elementary _____

Jr. High _____ Sr. High _____

College Miami-Dade Comm. College Adult Adult 2nd Language learners

Comments: These materials could also be used at the secondary school level for ESL learners.

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4. Cost

1. Initial cost of the program $439.90 per lab pack

2. Replacement policy (yes) yes (no) _____

Cost for replacement $7.00 per disk

3. Hardware requirements: 32K _____ 48K X 64K _____

Single drive X Double drive X (optional)

Printer (yes) X (no) _____

Color (yes X (no) _____

Special Hardware Required:
(yes) _____ (no) X

COMMENTS: _____

5. Does the program reach the target population for which it was designed? Yes __X__ No _____ N/A _____

6. Are the instructions well organized, useful, and easy to understand? Yes __X__ No _____ N/A _____

7. Does the material require extensive preparation or training on the user's part? Yes __X__ No _____ N/A _____

8. Does the program provide for user self-pacing? Yes __X__ No _____ N/A _____

9. Is the content presented clearly? Yes __X__ No _____ N/A _____

10. Is the program organized and presented in a sequential manner and in appropriate developmental steps? Yes __X__ No ____ N/A ____

11. Can the user exit the program at any time? Yes __X__ No ____ N/A ____

12. Does the user need typing skills to use the program? Yes _____ No __X__ N/A _____

13. Can a student use the program without supervision? Yes __X__ No _____ N/A _____

14. Is a printout of student performance available, if desired? Yes __X__ No _____ N/A _____

15. Is the screen presentation pleasing to the eye? Yes __X__ No _____ N/A _____

16. Does the speed of presentation match individual learning styles? Yes __X__ No _____ N/A _____

17. Is the size of the print clear and well spaced? Yes __X__ No _____ N/A _____

18. Are the use of graphics, sound, and color appropriate? Yes _____ No _____ N/A __X__

Documentation

1. Does the material require the purchase of accompanying printed material? Yes _____ No __X__ N/A _____

2. Does the material provide direct instruction? Yes __X__ No _____ N/A _____

3. Is the material self-sufficient? Yes __X__ No _____ N/A _____

4. Is the size of the print clear and well placed? Yes __X__ No _____ N/A _____

5. Are the materials packaged so they can be easily and safely stored? Yes ___X___ No _____ N/A _____

6. Is there a glossary of terminology provided? Yes ___X___ No _____ N/A _____

7. Does the documentation contain a section on trouble-shooting? Yes ___X___ No _____ N/A _____

8. Can you use the program without constantly referring to documentation? Yes ___X___ No _____ N/A _____

9. Is the documentation organized and presented in a sequential manner and in appropriate developmental steps? Yes ___X___ No _____ N/A _____

10. Does the publisher provide for a preview of the courseware? Yes ___X___ No _____ N/A _____

Content

1. Is the courseware simple to use ? Yes ___X___ No _____ N/A _____

2. Is the courseware content accurate? Yes ___X___ No _____ N/A _____

3. Are the courseware commands consistent? Yes _____ No ___X___ N/A _____

4. Is the material appropriate for the age group? Yes ___X___ No _____ N/A _____

5. Does the material provide a variety of built-in reinforcements? Yes ___X___ No _____ N/A _____

6. Does the content require previous learning or experiential background? Yes _____ No ___X___ N/A _____

7. Is the material presented on a meaningful and appropriate language level? Yes ___X___ No _____ N/A _____

8. Is the coursework free of sex bias and stereotyping? Yes ___X___ No _____ N/A _____

9. Does the program provide the user the opportunity for review? Yes ___X___ No _____ N/A _____

10. Can the user modify the instructional material? Yes ___X___ No _____ N/A _____

11. Is the software adaptable to different instructional strategies? Yes ___X___ No _____ N/A _____

12. Is the software compatible with your classroom presentation?
Yes ___X___ No_____ N/A _____

13. Does the program contain a data management system (recordkeeping)?
Yes ___X___ No _____ N/A _____

14. Is the software student-proof? Yes ___X___ No _____ N/A _____

15. Does the program allow the student adequate time to complete learning segments? Yes ___X___ No _____ N/A _____

16. Is the program designed to alert the teacher to a student who is experiencing difficulty with the content? Yes ___X___
No _____ N/A _____

17. Is the content relevant to the instructional needs of the student?
Yes ___X___ No _____ N/A _____

18. Does the program work as publisher claims? Yes _____
No ___X___ N/A _____

Evaluator's Recommendations: With correction of the "bugs" in the grading management system of the computer, this program has great potential for helping ESL students to improve their reading speed and comprehension in English.

Additional Comments:

Evaluation Summary

Please circle appropriate number with 5 being highest					
Performance	1	2	(3)	4	5
Ease of Use	1	2	3	(4)	5
Error Handling	(1)	2	3	4	5
Appropriateness	1	2	3	4	(5)
Documentation	1	2	(3)	4	5
Educational Value	1	2	3	4	(5)